HIGH SCHOOL AND UNIVERSITY
MATRICULATION EXAMINATIONS BOARD.

DEPARTMENTAL EXAMINATIONS, 1922

GRADE VIII.

AGRICULTURE.

Time—Two hours.

Values.

4 **1.** (*a*) Define soil, subsoil. Of what use is each to the growing plant?

3 (*b*) Name *one* distinguishing character *each* of (1) sand, (2) clay, (3) humus soils.

3 (*c*) Describe how any *one* of the soils mentioned in (*b*) part of this question is formed in Nature.

2. Three tins of the same size and shape and having perforated bottoms, are filled to the same depth with air-dried (1) sand, (2) clay, (3) humus, respectively. The tins are supported high enough above the table to permit of a glass tumbler being placed beneath each. Into each tin and upon the soil is slowly poured the same amount of water. What observations would be made as to:

3 (*a*) the rate at which the water passes through the three kinds of soil.

3 (*b*) the quantity of water in each tumbler after the tins cease to drip.

6 Explain the differences in the rates in (*a*) and in the quantities in (*b*).

4 **3.** (*a*) Name two disadvantages each of (1) a heavy soil, (2) a light soil.

4 (*b*) Describe *one* method by which a heavy soil might be treated to lessen some of its disadvantages.

6 **4.** Describe an experiment that shows that moisture is necessary for the germination of a seed.

[OVER]

Values.

2 Make a diagram of the apparatus used.

OR

✓ Outline a practical way for testing the germinating power of a sample of wheat. Make a diagram of the apparatus used.

10 **5.** Select any *two* of the following: onion, radish, pea, wheat, and indicate—
(*a*) The manner in which the soil should be prepared for planting.
(*b*) The depth the seed should be planted.
(*c*) The distance apart the seeds should be planted.
(*d*) In what month the planting should take place.
(*e*) What part of the plant is used as food.

10 **6.** The student has (1) a black currant bush (2) a sample of seed potatoes. Describe how to increase by propagation the number (1) of currant bushes (2) of potatoes.

7. A clover plant is dug up and the soil is very carefully washed off its roots. Small nodules are seen on the roots.
4 (*a*) Why are the nodules beneficial (1) to the clover plant (2) to the soil?
4 (*b*) Give two reasons besides the one in (*a*) why legumes are so commonly used in crop rotations.

4 **8.** (*a*) Give four reasons why weeds should be removed from a growing crop.
3 (*b*) Name *one* annual, *one* biennial and *one* perennial weed.
4 (*c*) Suppose that a garden is badly infested with any one of the weeds named by you in (*b*). Explain how to eradicate it.

4 **9.** (*a*) Write an account of the life history of the cutworm.
2 Illustrate by diagrams.
2 (*b*) What harm does the cutworm do?
3 (*c*) Describe *one* method used for keeping it in check.

12 **10.** Write articles on any *three* of the following topics:
(*a*) The importance of testing seed grain for purity.
(*b*) The advisability of giving prizes at fairs for collections of gopher tails.
(*c*) The protection of seed-eating birds.
(*d*) The advantages of tillage.
(*e*) The uses of the roots of plants to the plants themselves.

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